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09/667,003	09/21/2000	Woong Sik Choi	2658-191P	8781

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/667,003

Applicant(s)

CHOI ET AL.

Examiner

Jennifer T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2000.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is responsive to amendment filed on 9/27/05.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (hereinafter AAPA) figs. 2 and 3 in view of Troxell (U.S. Patent No. 5,177,406).

Regarding claims 1, 10, 20, and 27, APA figs. 2 and 3 discloses an electro-luminescence display device, comprising:

a first pixel cell (R) which display a first color, the first pixel cell having a first electro-luminescence diode with a first electrical characteristic;

a second pixel cell (G) displaying a second color, the second pixel cell having a second electro-luminescence diode with a second electrical characteristic;

a first driving circuit (T2 driving pixel R) which receives a first driving voltage (L1) and applies a first driving current to the first pixel cell based on the first driving voltage and the first electro-luminescence diode with a first electrical characteristic of the first electro-luminescence diode; and

a second driving circuit (T2 driving pixel G) which receives a second driving voltage (L2) equal to the first driving voltage and applies a second driving current to the second pixel

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cell based on the second driving voltage and second electro-luminescence diode with a second electrical characteristic of the second electro-luminescence diode (supported specification page 2, line 16 to page 3 line 17).

AAPA figs. 2 and 3 differs from claims 1, 10, 20, and 27 in that it does not specifically disclose the second driving current different from the first driving current; wherein the first and second pixel cells are independently driven.

Troxell teaches by varying the width of the channel of the first and second of the driving circuits, the on-current which flows through the pixels can be varied; resulting, each pixel cell is independently driven (col. 10, lines 24-58, Fig. 5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the second driving current different from the first driving current as taught by Troxell in the system of AAPA figs. 2 and 3 in order to provide the driving circuit have a geometry which can be tailored to optimally match the on-current flow from the pixel with the performance of that particular pixel.

Regarding claims 2, 3, 11, the combination of AAPA figs. 2 and 3 and Troxell teaches the first driving circuit and the second driving circuit has a different structure (col. 11, lines 11-45 of Troxell).

Regarding claims 4-9, 17-19, 21-24, the combination of AAPA figs. 2 and 3 and Troxell teaches the first pixel cell is a R pixel cell and the second pixel cell is a B pixel cell, and the first ratio is greater than the second ratio (col. 11, lines 11-45 of Troxell).

Regarding claims 12-15, the combination of AAPA figs. 2 and 3 and Troxell further teaches a third driving circuit comprises a third transistor having a third channel width and a

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third channel length, the third channel width to the third channel length forming a third ratio, the first second and third ratios being different, respectively (col. 11, lines 11-45 of Troxell).

Regarding claims 16, 25, 26 and 28, AAPA figs. 2 and 3 discloses an electro-luminescence display device, comprising:

a first electro-luminescence diode for a first pixel cell, the first electro-luminescence diode having a first electrical characteristic;

a first driving circuit (T2 driving pixel R) which drives the first electro-luminescence diode, the first driving circuit including a first transistor having a first channel width and a first channel length (not shown), the first channel width to the first channel length being a first ratio based on the first electrical characteristic of the first electro-luminescence;

a second electro-luminescence diode for a second pixel cell, the second electro-luminescence diode having a second electrical characteristic;

a second driving circuit (T2 driving pixel G) which drives the second electro-luminescence diode, the second driving including a second transistor having a second channel width and a second channel length (not shown), the second channel width to the second channel length being a second ratio, the second ratio based on the second electrical characteristic of the second electro-luminescence (supported specification page 2, line 16 to page 3 line 17).

AAPA figs. 2 and 3 differs from claim 16, 25, 26 and 28 in that it does not specifically disclose the first ratio being different from the second ratio.

Troxell teaches a first ratio being different from a second ratio by varying the width of the channel of the first and second of the driving circuits ($R = \text{Beta} \times L/W$), the on-current which flows through the pixels can be varied (col. 10, lines 24-58, Fig. 5). Therefore, it would have

been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the first ratio being different from the second ratio as taught by Troxell in the system of AAPA figs. 2 and 3 in order to provide the driving circuit have a geometry which can be tailored to optimally match the on-current flow from the pixel with the performance of that particular pixel.

Response to Arguments

4. Applicants' arguments filed 9/27/2005, have been fully considered but they are not persuasive because as follows:

In response to Applicants' argument stated "Troxell nowhere teaches that the change of the channel width is made based on the electrical characteristics of the electro-luminescence diodes of the pixel cells of the electro-luminescence device". Examiner respectfully disagrees because it was known that a driving circuit driving a driving current to a pixel cell based on an electrical characteristics of an electro-luminescence diodes of the pixel cell of the electro-luminescence device. In other words, each of a electro-luminescence diodes of the pixel cell of the electro-luminescence device has a different electrical characteristics according to the applied current, when a current with the same magnitude flows in each pixel cell, different color pixel cell has a brightness magnitude different from one to another (AAPA fig. 3, page 3, lines 10-17). Troxell teaches changing a current based on changing of a channel width of a driving circuit, resulting the current flows to each pixel is different from one to another varied, by adjusting the ratio (L/W) each type of pixel cell, allowing an appropriate current to flow through the pixel cell and achieve the requisite brightness level of illumination thereof (col. 10, lines 24-58, Fig. 5).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the

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teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Conventional Art's electro-luminescence display disclose a unit cell includes: a TFT switching device, storage capacitor, a driving transistor, and a pixel driving by a current flow in each pixel cell (AAPA fig. 2). Troxell teaches a unit cell includes: a TFT switching device, storage capacitor, a driving transistor, and a pixel driving by a current flow in each pixel cell (figs. 3 and 4). Therefore, it is proper to incorporate the changing the current magnitude flow to the pixel as taught by Troxell in the system of Conventional Art's display to improve the brightness of the display. It is believed that the ground of the rejection is maintained.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer T. Nguyen whose telephone number is 571-272-7696. The examiner can normally be reached on Mon-Fri: 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Nguyen
12/7/05


PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER